

Cold Tests of Air Rifles

November 2008

Geret Coyne, National Team Coach, tested two brands of air rifle in the cold chamber at Canmore in November 2008. He compared Fienwerkbau and Steyr air rifles designed for use in Biathlon. This is a summary of the results and some commentary from other coaches in response to the test results:

Geret's Test Results:

These tests were done by taking the barrel and action off the stock and mounting them on a test bench in a cold chamber.

Fienwerkbau P57:

Accuracy:

Minus 2 degrees C: 15-17mm groups

Minus 12 degrees C: 35mm groups

Duration:

"One of the rifles I tested was able to shoot at -12 to -15 for approx 1:00hr.

"The second rifle only lasted about 30min."

Styr LGB1:

Accuracy:

Minus 2 degrees C: 35 – 45 mm groups

Minus 15 degrees C: 35 – 45 mm groups

Duration:

"This Rifle still shot after 3+hrs at -15 " "and sometimes it was colder in the freezer during that time".

Comments on Testing Technique:

Duration:

Fienwerkbau P57 – the air cylinder lasts longer if it is tightened with the supplied wrench (Dave Bradley). Air leakage may be a function of the connection design (Celine Feagan).

It also may be a function of which generation of internal seals(washers) are installed (Cibles Canada).

Accuracy:

Styr LGB1 – The pellets might be the problem; recommended pellets are medium weight, 4.49, flat head (Celine Feagan). Her field experience with the ParaNordic teams is that the Styr is accurate under various WC competition conditions.

Both – My experience with children shooting either rifle off a rest is that they can shoot groups in the 10-15mm range on a regular basis if the temperature is above -5C, the air cylinder is newly charged , the rifle properly maintained and quality pellets are used (Alan Ball).

(continued)

Usability and Other Issues:

These are anecdotal reports, provided as-is to aid your own evaluation.

From personal experience with the rifles in Europe and all weather conditions (mostly freezing rain)-- both the Feinwerkbau and the Steyr, the Steyr is by far the best rifle. On the IPC circuit the Feinwerkbaus break more often than they work. These rifles are made for indoor use and not outdoors.

The Steyr is designed by Anschutz. It is a positive feed clip system (the air pressure advances the clip), the air canister is female thus there are no air leaks from the O ring unlike the other rifle. Everything is nickel coated and for maintenance you pretty much fire a cleaning pellet through every 200 rounds and that is it. Unlike the Feinwerkbau clips which freeze when the athletes breathe on them while shooting, there are no moving parts in the Steyr clips. The Steyr is very user friendly and is most like a biathlon rifle than any others (stock, accessories etc).

Last winter we dropped the clips in snow, shoved them through the rifle, tried to freeze the clips with moisture and it still shot decent groups. The type of pellet did make a difference when I was playing with it (not a bench like Geret). Essentially we are going with the medium weight pellet, highest quality and 4.49 for a bargain price of 80\$ for 5000 rounds. At 10m shooting for the 1.5cm target, the Steyr is very consistent with 4 clicks= 1 pellet width movement. I rarely am doing giant corrections at practice and races--mostly it is just 2-4 air rifle clicks. *Celine Feagan:*

I gave the Steyr to my 8-12 year old boys, experienced with Feinwerkbau, and they liked the Steyr better, particularly the bolt.. There were no half-cocks, but they had occasional difficulty with pellet alignment in the magazines. MUCH lighter; easier for younger kids to hold up.

We have found lately that you can eliminate many of the Feinwerkbau issues by using the supplied wrench to tighten the tank after installation. We haven't been able to test at -12 yet though. *Dave Bradley*

From what I've seen the Steyr is a good rifle. It has some issues as well in terms of operation and ease of use.

Positive:

- Seems to shoot better in the cold (and based on the testing is likely true)
- Less jams due to bolt action and better mechanism
- Good quality overall and
- Seem lighter and better suited to smaller athlete.

Negative:

- Have an issue where the clip doesn't advance (similar to the Feinwerkbau)
- The clips seem a bit more temperamental and the pellets can fall out if mishandled.
- The clip removal button is tiny and almost impossible to use with gloves (this is a big issue, almost a fatal flaw for winter - the only way we've been able to make it work is to have the athletes leave the clip in and the coaches remove the clip without gloves)
- The biggest issue here is that the Feinwerkbau seems to totally cease to operate in the cold. Although it may be true that a lot of clubs won't shoot when it's colder than -15 there are a lot more jams when it gets colder (Dave can speak to this more than I can). If the Steyr rifle could be modified to release the clips with a bigger lever and if the accuracy could be sorted out then I think they would be a better option. *Colin Bell*

Celine Feagan is the Technical Coach with the Canadian ParaNordic Biathlon Team, which uses air rifles on the FIS World Cup circuit. She has used both air rifles. Currently, Para Nordic use the Steyr LGB1.

Dave Bradley is the club coach at Foothills Nordic, one of the pioneers of air rifle biathlon in Alberta. Foothills has been using the Feinwerkbau P57 for many years. The LGB1 was on loan from West Coast Nordics, Vancouver.

Colin Bell is currently working for Vanoc, but he also is a veteran of the COP/Foothills/Bears program. He coaches as a volunteer with West Coast Nordics in Vancouver, who use the Steyr LGB1.

Steyr LGB1 Supplier: North Silva, Toronto; Peter Krause, peter.gunguy@gmail.com

Feinwerkbau Supplier: Cibles Canada, Ottawa, Jocelyn Langlois, cct@videotron.ca